Microsoft Exchange Server

Chapter 12
Promoting an Exchange Pilot System to Production

Deployment Guide

Abstract

This chapter outlines the steps for creating an Exchange 2000 pilot and then making sure that the system can be used as an operational mail server. There are several advantages to this approach, which allow you to obtain practical experience with Exchange 2000 before entrusting the system to your users. This route also allows for easy rollback if you encounter any problems during the pilot program. After completing the following steps, you should be able to convert an Exchange pilot to a production mail system.

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INTRODUCTION

At this point, you should understand how to install Exchange 2000 on a new server, which was covered in Chapter 4, “Installing Exchange 2000”. In this chapter, you will go through the process of creating a pilot Exchange server that can then be promoted to become your operational mail system.

One of the inherent problems with any upgrade or migration plan is the risk element associated with the process of moving from the old to the new mail system, such as application incompatibility, user acceptance or account migration. These risks are compounded by the fact that your users will not be familiar with the new mail application and may show significant loyalty to the previous version. Any failure with the new system might cause users to complain. Therefore it is important that you devise a method for implementing and testing a new mail system before your users transfer from the old format to the new.

Even if you do not choose to implement your pilot system as a production mail server, there are several steps to setting up a successful pilot system. These will also be covered in this chapter.

There are eight main phases in a testing and pilot program where the goal is to promote the pilot system to production.

1. Pre-Project Planning Phase
2. Project Planning Phase
3. Project Start
4. Lab Testing Phase.
5. Pre-Pilot Phase
6. Full Pilot Phase
7. Pilot to Production Phase
8. Post Migration Phase

These phases are expanded later in this document.

This chapter does not cover the lab-testing scenario. Further information on setting up a test lab may be found in the Exchange 2000 Resource Kit.

For more information, see http://mspress.microsoft.com/books/4355.htm

Design Considerations

- When you promote a pilot mail system to production, this will bring several advantages: It reduces the risks associated with migrating from one mail system to another.
- It allows for an extended testing and familiarization period for

both pre-pilot and pilot trials.

- Any unexpected migration issues will not bring your primary messaging system down.
- Your users will not be affected by installation problems.
- You can isolate your pilot and production mail systems.

However, you need to be aware that there are some potential drawbacks that you should consider before embarking on this upgrade process. The following table lists some of the problems that you can expect and how these issues can be resolved.

Issue	Risk	Benefit	Resolution
Interoperability with old mail system	Pilot users need to be able to send and receive mail from the old system	Ensures that pilot users use Exchange 2000 for their normal jobs rather than reverting to the old system whenever they want to send someone a message	Usually, the easiest route to interoperability is to use SMTP connectivity
Server Sizing	Using a production-size server at pilot time will be expensive	No further expenditure on hardware is required when migrating to production	See Architecture Chapter 3 “Quantifying the Operational Characteristics” for information on server sizing
Your pilot users need to be representative	Unrepresentative users will not test system properly or highlight issues	Your pilot will probably run more smoothly, but you will then get more issues appearing on the rollout	List the various types of user within your organization and classify them. Then try to have at least one of each main user type.

Resource Requirements

The resource requirements you need to implement any type of pilot system depend on what you think will be a reasonable testing period and how much performance testing you want to do.

The resource requirements that you need for a successful pilot system fall into the following categories:

- Hardware
- Software

- Personnel
- Time
- Space

Hardware

The hardware requirements for this type of pilot system are the same as for the eventual production Exchange 2000 system. See the following chapters Architecture Chapter 2 “Evaluating the Technological Factors” and Chapter 3 “Quantifying the Operational Characteristics” for information on determining the size of your Exchange servers to meet your anticipated messaging load. These requirements are:

Item	Minimum	Recommendation
Processor	Pentium-compatible 133 MHz processor or higher	High-end Pentium or Xeon. dual/quad Xeon recommended for servers supporting large numbers of users
Memory	128 MB	At least 256 MB
Disk Space	500 MB of free disk space on the disk drive where you install Exchange 2000 200 MB of free disk space on the system drive	Plus allowance for users’ mailboxes, public folders, backup and log files
CD-ROM drive	Fitted	
Monitor	VGA	SVGA

To get the most complete advantages from the pilot system, you should implement the backup solution that you intend to use with the production system. Make sure you talk to your backup solution vendor to check that they have agents capable of performing online backups of Exchange 2000. If not, you will need to use the NTBACKUP utility until updated agents become available. Using your intended production backup system will give you invaluable information on any problems that arise from the backup routines.

In addition, you will need a small 10/100 MB hub (depending on your network speed) that will allow you to create a small segment that you can selectively connect and disconnect from the main network.

Software

The software requirements for your pilot system are described in Deployment Chapter 4, “Installing Exchange 2000”. These requirements are the same as the operational requirements of the production mail

system. The exception is that you will not need to purchase an adequate amount of client access licenses until the pilot system is fully migrated.

Item	Comments
Windows 2000 Server or Advanced Server	The version of Windows 2000 you require will depend on the size of your organization, the number of clients you wish to support and the features that you want to use, such as support for clustering.
Exchange 2000 Standard or Enterprise Edition	This will depend on whether you need to support an information store of larger than 16 GB. For most organizations covered in this publication, this is likely to be the case.
Office 2000 or Outlook 2000	Exchange 2000 works well with previous versions of Outlook. Other clients include POP3, IMAP4 and HTTP/WebDAV.

Personnel

The people you select to be involved in the deployment should be committed to the process. They will also be the most difficult resource to secure, so book early! It is important that the individuals that you select to act as pre-pilot testers and technology evangelists are both enthusiastic and committed, in order to give the project the support and encouragement that it needs. Some of the players are already chosen for you. For example, you probably don't have the ability to hire and fire department heads. However, participants need to buy in to the pilot process. Order some coffee mugs if you think it will help or even T-shirts in distinctive tie-dyed patterns.

The next section lists the type of individuals that will need to be involved for a proper deployment.

Management Sponsor

The management sponsor is one of the most important team members. They should be able to make sure that you receive board-level support for both the planning and implementation phases. Try to keep them updated on a regular basis, for example with status reports and short weekly meetings, depending on your company's philosophy.

The management sponsor is often the IT Director. He or she will probably have to devote about ten hours total to the project, including attending your meetings.

Departmental Heads

It is very important to keep the departmental heads informed. In most cases, you can do this by e-mailing regular updates, such as on a weekly basis. However, you may need to consider holding a meeting for all

department heads at the beginning of the project, particularly if you are going to need their personnel as pilot users, technology evangelists, and so on. (If you are lucky, you may be able to persuade your management sponsor to do this for you.)

Project Manager

Aha. That would be you, then. You're the one who will be doing all the planning and most of the implementation work. If things go well, it will be hard but rewarding work. If things go wrong, then it will be a nightmare. It is important that you have – hence the importance of securing management support for the project.

Typically, you should look at devoting somewhere between two and five weeks of exclusive time to the pilot over the total duration of the rollout, depending on the complexity of this phase.

Network Manager

The network manager can also be a main player in this type of project, depending on the size of your organization. If you are the Exchange 2000 implementation bod and do not have responsibility for managing the network, then it would be a good idea to brush up on your networking skills and take the network manager out for a drink or something. Yes, that sort of networking. After all, the last thing you need in this project is a hostile network manager.

Technicians/Server Operators

On larger projects, you will need the assistance of one or more technicians to help you. However, with a larger company, obtaining this assistance should be less of a problem, because presumably there will be more staff on the IT team. You will need a technician to help you with installing client software, moving servers around, and as an assistant and general helper during the migration process. You don't want to be running around doing those little irksome jobs that you had to do when you were a junior server operator. Being a network god has got to have some perks, after all. You will probably need up to one week of exclusive time from the technician or server operator.

Helpdesk Operators

If your company operates a helpdesk, you will need to include them in your rollout plan. They will need a training course that should be focused on advanced features and troubleshooting. The training course for the technical evangelists will probably be suitable—the format for this course is covered later in this chapter. If you can include helpdesk members as pilot users, it will improve their support skills and efficiency.

Your helpdesk operators will probably require a day's training on the client software. The level of training should be equal to or greater than that of the technology evangelists, but their greater technical knowledge

and troubleshooting skills should provide them with a better range of solutions for solving users' problems.

Pre-Pilot Users

You will also need pre-pilot users who are generally members of the technical support staff. They will assist in implementing a very limited pre-pilot study. Because of their technical understanding and appreciation of the problems of a major e-mail rollout, you can expect them to be more tolerant of the inevitable early teething problems. With these pre-pilot users, you will also be more likely to prevent any possible negative feedback from this pre-pilot stage that could affect the eventual reception of the new e-mail system.

You will need these pre-pilot users for between three days and a week. Pre-pilot users will probably already be familiar with the client software. If not, an accelerated half-day course should be sufficient.

Pilot Users

Your pilot users need to be chosen with great care. They should represent the makeup of the company, and should include members from the major groupings of e-mail users (such as word processor operators, secretaries, managers, and mobile users, if applicable). If you are implementing a line-of-business application, such as a form-based inventory or process control, it needs to be piloted separately from the deployment pilot, as introducing this level of complexity into the pilot at this stage will tend to make the process very unwieldy. This means that you will have a two-phase pilot, with Phase One being the deployment and Phase Two being the testing of the line-of-business application once the mail system has been deployed throughout the organization.

Pilot users will need training on the new client software before taking part in the pilot. This training should contain the same content as the planned user training, as any problems in the training program can then be corrected before the full user training cycle begins.

Don't forget that your management sponsor and technology evangelists should be part of your team of pilot users.

Technology Evangelists (Super Users)

Technology Evangelists (TEs) are normally required only in larger or more distributed organizations. Their function is to be enthusiastic about the new e-mail system and to provide pre-helpdesk support to end-users in the first few weeks of adoption.

The issues you might encounter with Technology Evangelists are numbers, training, and motivation. Numbers just means ensuring that you have the right number of TEs in each department, office, or building, allowing for sickness and vacations. Motivation means making sure that your TEs are fully committed to the product and to its successful

implementation. Your ideal candidate would be a positive personality with an understanding of the issues involved – grumpy technophobes need not apply. If the lack of volunteers is an issue, you could consider a bonus plan for TEs, or an extra day's vacation by way of motivation – to be taken after the migration completes successfully.

Training for TEs will normally take a full day, covering all the user-level training topics with extra coverage on troubleshooting and more advanced issues, such as creating a messaging profile.

TEs will typically need to commit to about three or four days in total – one day for the training and two or three days in total for solving user problems.

For more information about TEs, see the section in this chapter on Risk Assessment.

Internet Service Provider Technical Support

You will probably need to contact the support personnel at your ISP. In fact, It is strongly recommend that you talk to them at the earliest opportunity, to explain what you are doing and to ensure that you have coordinated activities such as changes to domain name system (DNS) or mail collection using authenticated turn (ATRN). Beware – some ISPs are more equal than others when it comes to interfacing with Exchange 2000. In one project, the response to the question of "How can I collect my mail using Exchange 2000" was a long groan followed by "Well, you're the first." Needless to say, this was not a helpful response, and they weren't first choice of ISP for that particular project.

If your ISP handles your external DNS, they will need to change the mail exchanger (MX) record to your new server when you migrate from pilot to production. For larger pilots, you might need to consider a new domain name for the pilot users and use SMTP to create a temporary link between the pilot and the production systems

External Recipients

You should organize some external recipients for your pilot. These should be some friendly souls who don't mind sending and receiving occasional messages from fred@newmail.microsoft.com (or whatever you've called your pilot domain).

Time

Time requirements for deploying the pilot system can vary from five to eight weeks, if the system is a simple, straightforward pilot of basic messaging in a small organization, or up to a year in a LIO, LMO or LNO environment. (For an explanation of company types, see Architecture Chapter One, "Overview of the Exchange 2000 Migration Planning Process"). This timescale includes ordering the hardware, securing management support, training your users, the management briefings and

carrying out the pre-pilot as well as the actual pilot and migration to production.

Make sure you have plenty of slack during the implementation to cope with unexpected delays. Networks are subject to Parkinson’s Law, and are very likely to sulk and become unstable at crucial points in your deployment. A sample Project 2000 Gantt chart is provided as Job Aid 2.

Space
For information on space requirements, see the section on Allocate Sufficient Office Space below.

Prerequisites (All)

Before you implement any pilot system, there are a number of prerequisite tasks you should carry out. These steps are described in this chapter and listed below. However, if you plan to promote your pilot system to a production mail environment, you must carry out each of these actions as if you were doing them to your live system. Remember that your goal is to produce an installation that will easily transfer across to the live network, so all the operations you carry out on your pilot should be made with this eventual goal in mind.

By now you should have covered at least the following chapters within this guide. If you have any special operational constraints (for example, your company is Security Sensitive (SS), you should review the relevant chapters that apply to your situation.

THE PILOT MIGRATION PROCESS

The following chapters are relevant to this discussion:

Architecture

Chapter 2, “Making the Decision to Migrate”

Chapter 3, “Evaluating system dependencies and technical factors”

Chapter 4, “Connecting Active Directory to Exchange 5.5”

Chapter 5, “Creating the Consolidation Plan”

Chapter 6, “Designing Administration and Maintenance Models“

Deployment

Chapter 4, “Installing Exchange 2000”

As already indicated, the pilot migration process consists of eight main phases. Now let’s break down these sections and see some of the more detailed areas that need to be covered in such a project. The following list shows the phases in a typical pilot and migration project.

1. **Pre-Project Planning Phase**
    a. Present Business Case for Planning Phase to Management (See Job Aid 14)
2. **Project Planning Phase**
    a. Create Overall Migration and Test Plan (See Job Aids 2 & 15)
    b. Decide Which Features to Implement in Pilot
    c. Assess Risks of Pilot/Migration Process
    d. Secure Full Management and Budgetary Support (See Job Aid 14)
3. **Project Start**
    a. Assemble and Brief the Project Team (see Job Aid 17)
    b. Implement a Project Tracking Database
    c. Allocate Sufficient Office Space
    d. Order the Hardware & Software
4. **Lab Testing Phase (not covered in this guide)**
5. **Pre-Pilot Phase**
    a. Install Exchange 2000 on the Pilot Server(s)

   b. Train Technology evangelists and Pre-Pilot Users
   c. Run Pre-Pilot
   d. Evaluate Results of Pre-Pilot

6. **Full Pilot Stage**
   a. Train Pilot Users
   b. Run Full Pilot with Representative Users
   c. Evaluate Results of Full Pilot
7. **Pilot to Production Phase**
   a. Finalize Plan of Move from Pilot to Production
   b. Train End Users on New System
   c. Implement Move from Pilot to Production
   d. Carry out Post-Migration Tasks
   e. Deploy Client Software
   f. Inform Users of Changeover
8. **Post Migration Phase**
   a. Monitor for Correct Operation
   b. Decommission Legacy Messaging System

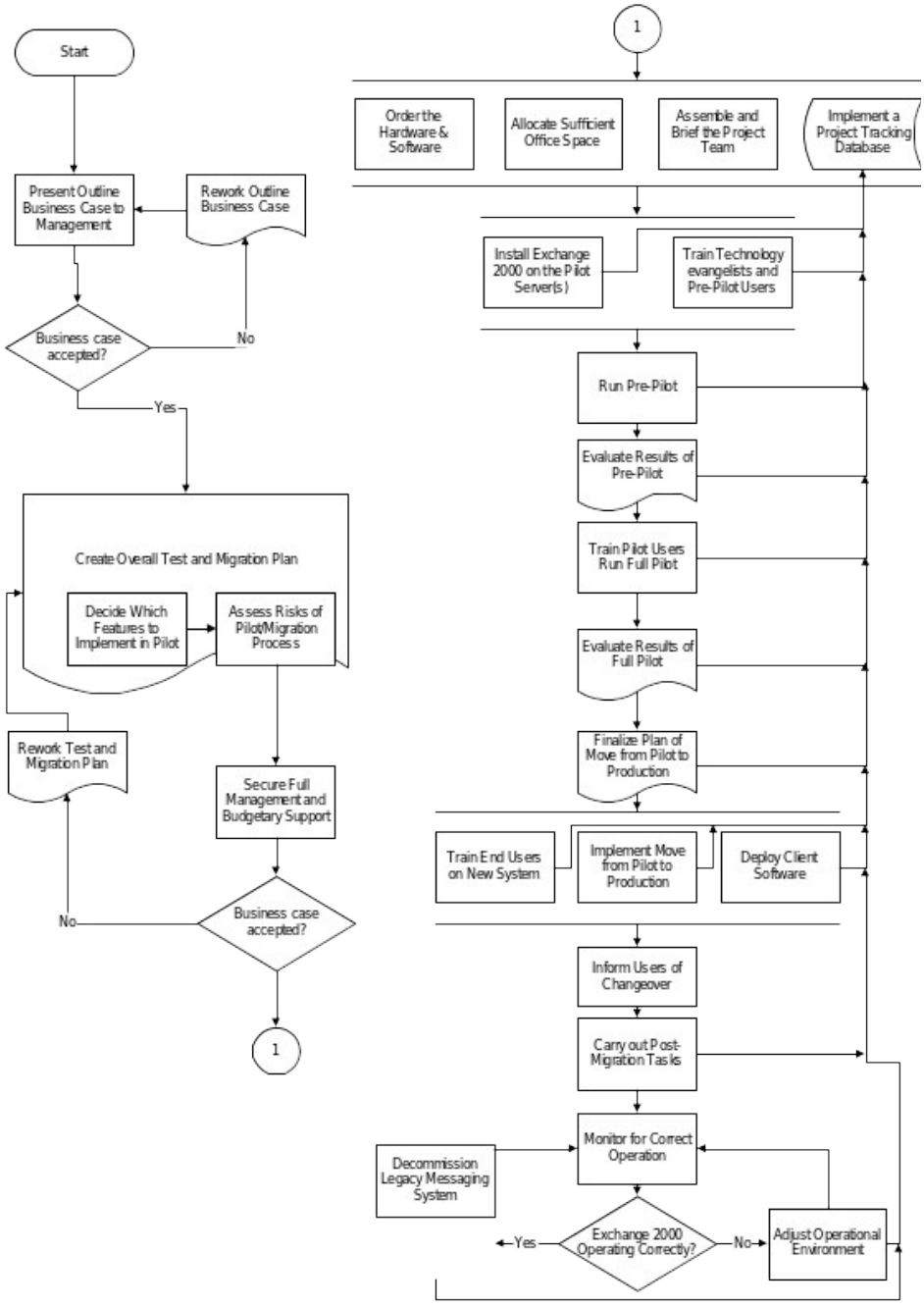
The diagram below shows the process flow, including areas that are concurrent activity.

The Rolling Implementation

Larger companies often migrate to a new e-mail system on a rolling basis, possibly based on moving departments, offices or buildings at a time. This type of implementation will affect your plan in only one major way, which is that your legacy and Exchange 2000 systems must be connected and that this connection must be able to cope with the volume of traffic between the two systems. Other than that, the rolling implementation is just like a normal deployment except that the pilot to production phase and post-migration phases happen several times.

The exception is in Large International Conglomerates (LIC) situations, where you may have to carry out multiple pilots for each company within the organization. However, the lessons learned from the first pilot can be applied to any subsequent rollouts, thus simplifying the process on later implementations. For an explanation of company types, see Planning Chapter 1.

PRE-PROJECT PLANNING PHASE


Start
Present Outline Business Case to Management
Rework Outline Business Case
Business case accepted?
No
Yes
Create Overall Test and Migration Plan
Decide Which Features to Implement in Pilot
Assess Risks of Pilot/Migration Process
Rework Test and Migration Plan
Secure Full Management and Budgetary Support
No
Business case accepted?
1
1
Order the Hardware & Software
Allocate Sufficient Office Space
Assemble and Brief the Project Team
Implement a Project Tracking Database
Install Exchange 2000 on the Pilot Server(s)
Train Technology evangelists and Pre-Pilot Users
Run Pre-Pilot
Evaluate Results of Pre-Pilot
Train Pilot Users Run Full Pilot
Evaluate Results of Full Pilot
Finalize Plan of Move from Pilot to Production
Train End Users on New System
Implement Move from Pilot to Production
Deploy Client Software
Inform Users of Changeover
Carry out Post-Migration Tasks
Monitor for Correct Operation
Decommission Legacy Messaging System
Exchange 2000 Operating Correctly?
Yes
No
Adjust Operational Environment

Now let’s look at these phases in more detail and, where necessary, break the phases down into individual steps.

The first phase is in some ways the simplest with only one main task to complete, getting permission to carry out the planning process.

PROJECT PLANNING PHASE

Present Outline Business Case to Management

The first step in any pilot is to present the outline business case to management. This does not normally require a formal presentation – an informal meeting is probably enough. What you are looking for is to secure management approval for you to carry out the planning process. So if one of the Directors walks into your office at a time when you have your eyes tightly closed in deep contemplation, you can say that you are carrying out a personal brainstorming session on the risks associated with the mail migration project.

The outline business case should at a minimum cover the areas detailed in Job Aid 14.

Next it's time for the project planning phase, including the detailed analysis of your current situation, a risk assessment of the migration process and a feature review of Exchange 2000, all of which are incorporated into your migration and test plan.

Create Overall Test and Migration Plan

Once you have secured outline approval from management, you need to create a strategic Test and Migration plan. This will cover the following areas:

1. Determining pilot objectives.
2. Choosing which features to pilot.
3. Documenting existing infrastructure requirements.
4. Recording the current network.
5. Conducting a risk assessment.
6. Planning the pre-pilot.
7. Moving from lab to pilot.
8. Selecting the pilot users.
9. Setting user expectations.
10. Preparing the user training.
11. Planning for disaster recovery & contingencies.
12. Retasking of decommissioned resources.

Most of these areas are covered in detail in the following sections. Job Aid 15 provides an outline structure for your plan that you can adapt to your own needs.

Decide Which Features to Pilot

The new features for Exchange 2000 can be categorized into five main

areas:

- Higher Scalability
- Easier Management
- Lower Cost
- Greater Availability
- Enhanced Workflow Services

With such a complex e-mail system, you are unlikely to be able to (or want to) test all of the product's features at once. So early on, you need to make a decision as to which areas you will pilot, which areas you will leave out and why. You need to apply this selectivity to both client and server features.

Client Features

In order of increasing complexity and specialization, you can classify the client features as follows:

1. Basic email via Outlook Client
2. Basic Public Folder Support
3. Internet Email interoperability
4. Public Folders supporting shared calendaring and contacts
5. Offline Stores and Synchronization
6. Dial-up using RAS
7. Outlook Web Access
8. Custom Forms
9. Line of Business Applications
10. Chat Facilities
11. Presence Monitoring and Instant Messaging
12. Data and Video Conferencing

Server Features

New server-side features (in no particular order of importance) cover items such as:

1. Backing Up and Restoring
2. Connectivity to External Systems
3. Storage Groups and Multiple Databases
4. Web Storage System
5. Address Lists
6. Full-Text Indexing

7. Routing Groups, Bridgehead Servers and message transport between routing groups.
8. Using Administrative Groups
9. System Policies
10. Distribution List Management
11. Implementing Exchange 2000 Conference Server

For more information on the features in Exchange 2000, see Architecture Chapter 1, “Overview of the Exchange 2000 Migration Planning Process”.

Whichever features you decide to pilot, it is very important to stick to that decision, otherwise your program will be threatened by “scope-creep”, where increasing demands are made to implement newly discovered features within Exchange 2000. Therefore, once you have decided on the breadth and depth of your pilot, stick to it, and make sure your management sponsor is willing to support your particular implementation.

Assess Risks of Pilot/Migration Process

Assessing and mitigating the risks associated with a pilot/migration process follows the general principles of risk assessment. Risk assessment and management follows this five-step approach:

1. Identify the Risk
2. Analyze the Risk
3. Plan for Risks
4. Track the Risks
5. Control the Risks

Risks Associated with Mail Migration

The risk factors that can arise from a pilot migration will be unique to each situation. The following list gives some of the more general risks.

- Pilot messaging traffic affecting the live network.
- Pilot users disliking the new mail system.
- New mail system found to be not suitable (hopefully a low risk!).
- Management support withdrawn.
- Current network infrastructure not adequate for the new system.
- Technical issues disrupt deployment timetable.
- User Training not delivered in time or in appropriate depth.
- Not enough Technology Evangelists available.
- Administrator training not delivered in time or in appropriate depth.

Not all these risks will apply to your network, and you will undoubtedly find some of your own. For each of the risks that you do identify, you

should carry out a risk assessment and mitigation process. The following is an example of how you might carry out this risk analysis:

Sample Risk Analysis
Risk Identifier: Training Technology Evangelists

Risk Statement: The deployment plan calls for a number of Technology Evangelists (TEs) to be the initial personnel trained on the new mail system. These people will then be the first line of assistance to general users. There are few people within the company who are capable of carrying out this function and there may be a motivation problem due to what could be perceived as an unwelcome burden. There must also be enough TEs to cope with vacations, sickness, and so on.

Risk Management Strategy: An incentive will be offered to encourage volunteers to get involved in the technological evangelism process. Training for TEs will be given before production roll-out.

Risk Management Strategy Metrics: The number of TEs should be ten or greater. Allowing for 50% unavailability, the program should then be scaled to train 20 TEs in total.

Action Items: Request that a member of management produce a suitable incentive for TEs either on a weekly basis or for the number of support requests answered.

Due Date: By end of Phase One training.

Personnel Assignment: Financial Director, Training Manager and Personnel Director.

Risk Contingency Strategy: Helpdesk personnel may incur a higher number of support calls. Hire a suitably qualified temporary worker with Outlook technical support skills to deal with the first-line support calls.

Risk Contingency Strategy Metrics and Trigger Value: If a suitable number of TEs have not been appropriately trained by the end of Phase Two training, plan to hire a temporary worker with the necessary technical support skills for the helpdesk during the migration period.

You should carry out this risk assessment and mitigation process for all the risks that you identify, document the possible effects and propose prevention and mitigation solutions. (And then the one thing you didn’t consider will happen…)

Secure Full Management and Budgetary Support

You need to make sure that your management understands in detail what you are proposing for the project. You should make it clear that this project is not something that can be done after work on a Monday evening. If you are going to achieve your goal of migrating to the new

mail system, management must understand that it is going to take significant planning, preparation and resources.

You need to make the directors aware of the risks involved—risks that you have documented, analyzed and attempted to counteract.

You should point out the resources required, in terms of equipment, space, time and personnel, as detailed previously in this chapter.

After you have secured management support, you can get started on the pilot project itself.

Order the Hardware and Software

Your project plan should already detail the hardware and software required for the Exchange 2000 pilot. Now you can have the fun (or frustration) of trying to obtain the correct equipment.

It's a good idea to request quotations from the proposed suppliers as soon as you have enough relevant hardware and software information in your plan to be able to specify the servers. This information can then be fed back to management to get budget approval. Place the order for hardware (software usually isn't such an issue) as soon as you have secured management backing.

It is critically important that you only use equipment listed on the Microsoft Windows 2000 Hardware Compatibility List (HCL)—see http://www.microsoft.com/hcl for more information. Potential problems in ordering the hardware of which you should be aware include:

- The server that you order will probably drop in price by at least $1000 the day after you pay the invoice.
- If the server doesn't drop in price, the specification will go up to one that you wanted but your budget couldn't afford.
- Any extra SCSI disks that you order will have incompatible connectors with your server or out of stock for at least a month.
- You can have any color you want as long as it's beige.

Assemble and Brief the Project Team

Your next most important task is to identify, secure and motivate your project team. The ways in which you actually manage this will vary according to the size, composition and corporate culture of your organization.

You will be looking for the following personnel:

- Pre-Pilot Users
- Technology Evangelists
- Pilot Users

Your pre-pilot users should not present too much of a management and motivation issue; hopefully they will be keener than most to see the new messaging technology. Pre-pilot users are typically volunteers and should know how to contribute positively to your fledgling knowledgebase.

Hopefully, you will have secured some motivation package for your TEs and you will be flooded with volunteers. Remember to choose those whom you trust to provide first-level support to general users, and who have the requisite skills (both technology and people skills).

Bear in mind that your actual pilot users may not all be volunteers to the same degree – in fact, difficult and non-technically aware pilot users can be more useful to your testing than meekly compliant ones, as they tend to be harsher judges of the suitability of a new system. However, you will have to balance the need for many volunteers against the fact that you don't want the office foghorn on permanent send about the alleged inadequacies of the new email system.

If the personnel that you require are not in your department or are not under your direct managerial control, your job will be made even trickier. However, a good project meeting with all involved will help. You can find the template for your presentation at Job Aid 17.

For a very large pilot, you may need to hold separate meetings for the different groups. This will allow you to customize the content to each group's needs.

Implement a Project Tracking Database

You know when a new project is really off the ground, because someone is tasked to design a database (don't forget – mauve has the most RAM[*]). In larger organizations, you might be able to delegate this task. For most companies, though, this job will be yours. The format and technology used for your pilot database is a matter of personal preference—what is important is that this project database should:

1. Be easy to use for all staff involved in the project.
2. Be convenient, with an easily accessible front end (easy to use and convenient are not the same thing).
3. Record the correct information with a suitable level of detail.
4. Allow for monitoring the progress of the project by yourself and others.

The format can be anything from a multi-table relational SQL 2000 database to a whiteboard and a set of colored pens (not permanent). Use

[*] © The PHB in "Dilbert"™

whatever works best for you.

The database should contain:

1. A list or chart of project milestones and events with associated timescales.
2. A record of personnel matched to tasks.
3. A reporting trail that will provide a basis for the system documentation.
4. The beginnings of a technical support FAQ/knowledgebase.

Microsoft Access 2000 has a sample project database that you can adapt to your own needs.

Allocate Sufficient Office Space

To conduct a successful pilot, you need to ensure that you have sufficient space to carry out any testing without interfering in the normal operation of the network. You need to select a location that is large enough to include the pilot servers, desks, one or more chairs, and a workstation. You should also be able to connect and disconnect your pilot system from the main network without causing any disruption. We recommend using a small hub, as described in the hardware section in this chapter.

Your testing space should have a telephone so that you have the option to use voicemail or to have calls routed through to where you are working.

Do not use the server room for your pilot. It is probably too noisy, too busy and too cold to be an effective pilot location.

Training Facility

One space requirement that is often overlooked is the training facility. You will need to have either a dedicated training room with suitable client machines or to book training days with a local Certified Training and Education Center (CTEC).

For more information, see http://www.microsoft.com/train_cert.

In the pre-pilot phase, you test the assumptions in your pilot plan and make any necessary adjustments.

Train Pre-Pilot Users and Technology Evangelists

Before you run the pre-pilot, you need to train your pre-pilot users. This is probably a good time to train your Technology Evangelists as well, as both groups will have similar training needs. A day’s training course on the client should be sufficient, covering both the user training and the

extra technical and support content.

For a small pilot, and when you can spare the time, you can probably do the training yourself. If you have a dedicated training room or a suitable room that you can use, then hiring a freelance Outlook trainer (with references) may be the most cost effective or least problematic option. If you have no training facilities, then you will need to consider using an external training company and possibly customizing their course to suit your needs.

Some training companies will let you audit their training sessions. This is a wise move if you want to guarantee the quality of the training.

Install Exchange 2000 on the Pilot Server

Now that the hardware has arrived, you can install Windows 2000 and Exchange 2000 on your pilot server(s). Don’t forget to document the actions you take for follow-up and troubleshooting in your project database.

Chapter 4, “Installing Exchange 2000” covers all the details you will need to know in order to carry this out.

Run Pre-Pilot

Having done all the preparation work, your next phase is to run the pre-pilot.

Explain to your volunteers the pre-pilot phase goal, and give them a list of tasks that they must carry out. These tasks should be the same as the list of tasks for the pilot. It is also extremely important that you get the volunteers to catalog any problems that they see before they try to fix them. They need to put themselves in the position of a user for whom completing a wizard is a challenge.

Evaluate Results of Pre-Pilot

You will probably find that there are a significant number of lessons to be learned from the pre-pilot. However, be aware that your pre-pilot users are technically aware and may be inadvertently fixing problems as they find them and then not reporting the problem. Review all the issues raised and make adjustments to your pilot setup before continuing.

After you have successfully completed your pre-pilot phase, you are ready to move onto the full pilot phase.

Train Pilot Users

Now you need to train your pilot users. Remember that this is a practice

run for the full deployment training. If you are outsourcing the training, make sure you get copies of the feedback from the training center. If you are performing the training in-house, audit the quality of the delivery and review the attendees' feedback. In both cases, prepare to review the content of the training sessions to ensure that the pilot users receive the correct material at the right pace and level of complexity.

Check that the training material is task-focused, limited to the features you are implementing, and relevant to your company and the day-to-day operations of your users. There's no point in having a long section on implementing offline stores if your staff all work from desktops in a call center.

Usually a half-day course will be sufficient for training end users, so this should also be what your pilot users get.

Run Full Pilot

You are now ready for the full pilot.

1. Ensure your pilot users have received and successfully completed your pilot training.
2. Make and document any adjustments to the pilot servers resulting from the pre-pilot and then fix them online.
3. Deploy the software onto the pilot users' machines with the method you will be using on the production rollout (for example, software policies, Systems Management Server, or helpdesk techie with a bunch of floppy disks).
4. If necessary, configure an automatic profile generation.
5. Notify the TEs and helpdesk that the pilot has started.
6. Inform the pilot users that the program has started.

You should have given each user a list of tasks that they should carry out. These should be appropriate for each type of user. For instance, an administrative assistant should be tasked to open his or her boss's inbox and calendar and answer mail on their behalf. Ideally, the boss should be on the pilot as well.

Generate suitable mail traffic to emulate the operation of the system. However, you don't normally need to use the pilot for full performance testing – you should have already done this in the lab. And remember that this is on your live network now, so you don't really want to be flooding your hubs with packets.

Evaluate Results of Full Pilot

Once the pilot has run for the planned duration and you feel confident

that you have answered any outstanding questions for the rollout, you can move onto evaluating the results. You need to provide feedback forms, either by paper or (if you are feeling adventurous) in Outlook for your users to fill in and return. Any client issues of usability, suitability and stability can then be addressed. Your helpdesk and TEs should give you additional information about the number and type of support calls that they answered. Again, all this information should be fed back into the project database.

When you have finished gathering the information, you can carry out an analysis that can then be presented to your management sponsor and fed back to the board.

With the full pilot successfully under your belt, you are now going to embark on the most critical step in the process – migrating your pilot system to production. Before you begin it is critical that you review your plan and make sure you have incorporated all the lessons from the pilot.

Finalize Plan of Move from Pilot to Production

With the analysis of your pilot complete, you should now be able to complete the final tweaks to your deployment plan. You should have your team ready for the deployment and have answered all the technical queries that you think are likely to occur. Do give yourself plenty of time to complete this re-evaluation. After all, it will be your reputation on the line if it doesn’t go as planned.

Train End Users on New System

While you put the final touches to your move from pilot to production, you can implement the users’ training schedule. Remember to operate the same quality procedures that you used during the pilot user training.

Setting User Expectations

One of the less-known aims of user training is in setting user expectations. Your users need to know what Exchange 2000 and Outlook 2000 are capable of doing and what they are not. For example, they should not expect to be able to author web pages using Outlook but they should be able to open HTML-formatted mail. Make sure the training gets the message across about the capabilities of the new system.

Implement Move from Pilot to Production

You can now begin the process of moving your Exchange 2000 system from pilot to production. The exact details will depend on whether you are migrating from Exchange 5.x or another messaging system,

consolidating or co-existing.

This is a good time to instruct your users to clean all unnecessary messages out of their mailbox before conversion. (Or even better, claim that mailboxes can't be migrated and dump a huge amount of mostly useless mail in the process). Threats about mailbox size limits are usually effective in getting action from your users.

Messages need to be migrated between users logging off with the old mail system and logging back on again with Exchange 2000. Therefore, this will probably be a nighttime job.

Deploy Client Software (Optional)

If your deployment plan includes upgrading the client, then the final task to carry out before switching your clients to the new mail system is to deploy the client software. You can do this by a number of different methods. For example:

- Windows 2000 Software Distribution
- Systems Management Server (with Service Pack 2)
- Network shares and batch files
- CD (unlikely)
- Floppies (just kidding…)

If you use network shares and batch files or a CD installation, remember that Outlook needs to be installed with Administrator rights on Windows NT and Windows 2000. To finish the configuration, the first logon to Outlook should also be with an Administrator account.

Inform Users of Changeover

Today's the day on which your users covert to Exchange 2000. You should have migrated the mailboxes and taken the old server off-line. Get your TEs and helpdesk in place early on changeover day so that they are available to answer queries as soon as the users log in. When the users arrive at work, it is probably a good idea to remind them that the changeover has taken place and that they should start Outlook rather than the legacy email system.

If you are just upgrading to Exchange 2000 from Exchange 5.5, then the client side shouldn't be such an issue as you may already be using Outlook 2000.

Reverting to Legacy E-mail System

If some disaster does strike and you find your helpdesk and TEs besieged by hordes of angry users, then you may have to reinstate the old mail

system. Bear in mind that this should only be used as a last resort, as you will then have to re-export your users' mailboxes when you next try to implement the migration. Make sure that you have analyzed the problem and that you are certain that you have solved the issue before you attempt the migration again.

Once you get this far, you are probably feeling more than a little relieved. With the worst part behind you, you can now move on to monitoring Exchange 2000 for correct operation and then decommissioning the old email system.

Carry out Post-Migration Tasks

Post-migration tasks will include monitoring of the calls to the helpdesk and their resolution and of the TEs to see that the migration has not produced any major problems. You will doubtless also be besieged with requests for support, mostly from managers (who couldn't be bothered to attend the training sessions).

It would normally be a good idea to take the legacy system offline as soon as you have migrated the mailboxes and Exchange 2000 has gone live. If you have done your homework, then the new system should be functioning correctly, and you will probably have plans for re-using the old hardware. However, it would be a good idea to keep the old server running at this point because you might need to implement a quick restoration of the previous mail system.

Monitor for Correct Operation

Once the migration has taken place, check for any problems with Exchange 2000 by using Performance Monitor and Network Monitor. Again, continue to monitor the support calls and depend on the TEs. You can probably take over from the TEs after about two weeks, although doubtless the users will probably keep pestering them for a while longer.

After a month or possibly sooner, you can move onto a longer-term monitoring program as described in Chapter 10 "Tuning Exchange 2000 for Performance" and Chapter 11 "Analyzing the Migration Process" of this guide.

Decommission Legacy Mail System

Once you are convinced that Exchange is properly migrated, your backup routines are up and running, and your trial restores are functioning correctly, you can decommission the legacy messaging server. (And give yourself a large pat on the back for a job well done!)

In this chapter, you covered the planning and actions necessary to set up

an Exchange 2000 pilot and then to convert this pilot to a production messaging system. As you should appreciate by now, this is a complex procedure, and it should not be taken on lightly. The two most important factors are the planning of the project and the team that you select to assist you in this task. Ensure that you have considered and evaluated all conceivable options and that you have a risk mitigation strategy to cope with all foreseeable eventualities.

More Information

For more information, see the following links.

Windows 2000 Hardware Compatibility List - http://www.microsoft.com/hcl

Exchange 2000 Home Page – http://www.microsoft.com/exchange

Microsoft Exchange 2000 Resource Kit Part 3 – Prototyping Exchange 2000 http://mspress.microsoft.com/prod/books/4355.htm

For more general information on planning pilot rollouts, see

http://msdn.microsoft.com/library/default.asp?URL=/library/winresource/dnwin95/s6ea1.htm

Although this deals with Windows 95, a lot of the principles still apply.

Microsoft Consulting Services (MCS) have many experienced consultants who can carry out the migration process described. For more information see

http://www.microsoft.com/CIO/services/consulting.htm

Many Microsoft Certified Solution Providers (MCSPs) also have the skills needed to successfully complete a project of this nature and can be contacted through http://www.microsoft.com/mcsp.